AMENDMENTS TO THE CLAIMS

1. (currently amended) A prosthetic device for use in the treatment of ~~aortic stenosis in the~~ an aortic valve of a patient's heart, said prosthetic device having a compressed state for transarterial delivery and being expandable to an expanded state for implantation, said prosthetic device comprising:

an expandable support ~~metal base~~ constructed so as to be implantable in the expanded state of the prosthetic device in [[the]] an aortic annulus of the aortic valve;

[[and]] an inner envelope having an upstream portion that lines ~~lining~~ the inner surface of the support, ~~metal base; characterized in that said~~ and a downstream portion which, ~~inner envelope,~~ when the prosthetic device is in the expanded state, ~~state of the prosthetic device~~ is configured to extend ~~extends~~ into [[the]] an aorta and ~~is of~~ defines a diverging conical section ~~configuration, in which its~~ having a diameter that gradually increases from ~~its proximal end within the aortic annulus to its distal end extending into the aorta, such as~~ an upstream end of the diverging conical section to a downstream end of the section, which diverging conical section is configured to produce, during systole, a non-turbulent blood flow into the aorta with pressure recovery at the downstream ~~distal~~ end of the diverging conical section; and ~~plastic envelope,~~

a prosthetic valve coupled to the downstream portion of the envelope at the downstream end of the diverging conical section.

2. (currently amended) The prosthetic device according to Claim 1, wherein, in the expanded state of the prosthetic device, said ~~inner envelope of~~ diverging conical section ~~configuration~~ has an upstream ~~proximal~~ end of 5-20 mm in diameter and a downstream ~~distal~~ end of 15-30 mm in diameter, and is of 15-45 mm in length.

3. (currently amended) The prosthetic device according to Claim 2, wherein said ~~proximal end~~ upstream portion of the inner envelope includes a short straight section of uniform diameter within said aortic annulus effective to avoid flow separation through said ~~plastic~~ upstream portion of the envelope.

4. (original) The prosthetic device according to Claim 3, wherein said short straight section has a length of 2-10 mm.

5. (currently amended) The prosthetic device according to Claim 1, ~~wherein said aortic valve of the patient's heart is of the type which includes a plurality of leaflets movable to open and closed positions and~~ wherein said support ~~metal base~~ includes two annular clamps engageable with the opposite sides of ~~said~~ native leaflets of said aortic valve in ~~their~~ the native leaflets' open positions for clamping the support ~~metal base~~ to said leaflets.

6. (currently amended) The prosthetic device according to Claim 5, wherein each of said two annular clamps includes an annular array of fingers ~~forgers~~.

7. (currently amended) The prosthetic device according to Claim 6, wherein said support ~~metal base~~ includes an annular array of bracing elements ~~at the distal end of the prosthetic device~~ engageable with [[the]] an inner surface of the aorta for bracing the prosthetic device within the aorta.

8. (original) The prosthetic device according to Claim 7, wherein said bracing elements are integrally formed at one end with said annular array of fingers of one of said annular clamps.

9. (currently amended) The prosthetic device according to Claim 1, wherein said support, ~~metal base,~~ when the prosthetic device is in the expanded state ~~of the prosthetic device~~, extends to said downstream ~~distal~~ end of the diverging conical section, ~~inner envelope,~~ such that said inner envelope serves as a liner lining the inner surface of the support ~~metal base~~ from said upstream end to said downstream end of the diverging conical section. ~~proximal end to said distal end of the prosthetic device.~~

10. (canceled)

11. (currently amended) The prosthetic device according to Claim 1 [[10]], wherein said prosthetic valve comprises ~~includes~~ a plurality of leaflets movable to open and closed positions.

12. (currently amended) The prosthetic device according to Claim 11, wherein said leaflets of the prosthetic valve are integral with said inner envelope ~~lining the inner surface of the metal base~~.

13. (canceled)

14. (currently amended) The prosthetic device according to Claim 1 [[13]], wherein said diverging conical section of said inner envelope ~~extending into the aorta~~ comprises ~~is of~~ a flexible pliable material.

15. (currently amended) The prosthetic device according to Claim 1 [[13]], wherein said diverging conical section of said inner envelope ~~extending into the aorta~~ comprises ~~includes~~ a plurality of axially–extending reinforcing struts.

16. (currently amended) The prosthetic device according to Claim 15, wherein said reinforcing struts are hingedly connected to said support ~~metal base~~.

17-40. (canceled)

41. (new) The prosthetic device according to Claim 1, wherein the support comprises a metal base.